Navarro, S. and Donahaye, E. [Eds.](1993) Proc. Int. Conf. Controlled Atmosphere and Fumigation in Grain Storages, Winnipeg, Canada, June 1992, Caspit Press Ltd., Jerusalem, p. 483.

SEALED STORAGE TECHNOLOGY ON AUSTRALIAN FARMS

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ABSTRACT

The technology of sealed storage has been commercially available to Australian grain growers since the early 1980s. Widespread application on farms has, however, only occurred in the state of Western Australia. Factors that affect adoption rates are detailed in the paper and include government policy, availability of information, grain quality standards and geographical location. Sealed storage has several advantages over conventional unsealed storage on farms: it allows rapid and complete disinfestation of stored grain; "non-chemical" control agents such as carbon dioxide can be used; lower dosages of fumigants are effective thus reducing costs; unacceptable residues from contact insecticides are avoided; and reinfestation of grain is less likely. The advantages are most apparent to silo operators who store "non-traditional" crops such as grain legumes. These commodities often have stricter market limits on quality and/or attract insects that are relatively tolerant of poor fumigation and controlled atmosphere (CA) practices. On-farm sealed storage is restricted almost exclusively to metal silos, including flat-bottomed and elevated designs. The evolution over the last 15 years of sealing methods used on these storages was discussed, and cost/performance compromises identified. The importance of effective transfer of information on the design, performance and operation of sealed silos to both manufacturers and operators was stressed. Inadequate maintenance of silos often results in a rapid decline in performance, and is a major barrier to wider adoption of sealed storage on farm